

CLAIMS

What Is Claimed Is:

1 1. A liquid crystal display device comprising:
2 a liquid crystal display panel having a backside;
3 a light guide plate including an incident surface and an
4 emitting surface, said light guide plate being provided along said
5 backside of said liquid crystal display panel wherein said emitting
6 surface of said light guide plate faces toward said backside of
7 said liquid crystal display panel;
8 a lamp disposed along said incident surface of said light
9 guide plate; and
10 a lamp reflector having an inner circumference surface
11 defining a space for accommodating said lamp, a light reflection
12 layer formed on said inner circumference surface, and a transparent
13 protective layer formed on said light reflection layer,
14 wherein said transparent protective layer has a thickness less
15 than about 5 micrometers.

1 2. The liquid crystal display device of claim 1 wherein said
2 light guide plate further includes a back surface opposing said
3 emitting surface, and wherein said lamp reflector further includes
4 arm portions disposed along said emitting surface and said back
5 surface at the incident surface side of said light guide plate, and
6 wherein light transmission regions defined by the space between
7 said arm portions and said emitting surface and said back surface
8 have thicknesses less than about 5 micrometers.

1 3. The liquid crystal display device of claim 1 wherein said

transparent protective layer has a thickness of 3.5 micrometers or less.

4. The liquid crystal display device of claim 2 wherein said light transmission regions have thicknesses of 3.5 micrometers or less.

5. The liquid crystal display device of claim 1 wherein said lamp reflector further comprises a sheet-shaped support body having a specified rigidity.

6. The liquid crystal display device of claim 1 wherein said transparent protective layer is formed on said light reflection layer after said light reflection layer is formed on said inner circumference surface.

7. A side backlight unit comprising:

a light guide plate including an incident surface, an emitting surface adjoining said incident surface, and a back surface adjoining said incident surface and opposing said emitting surface;

a lamp disposed along said incident surface of said light guide plate; and

a lamp reflector for reflecting light irradiated from said lamp toward said incident surface,

wherein said lamp reflector includes: an inner circumference surface defining a space for accommodating said lamp; arm portions each having an arm surface extending from said inner circumference surface, said arm surfaces sandwiching said emitting surface and said back surface of said light guide plate on said incident surface side and defining light transmission regions between said arm surfaces and said emitting surface and said back surface; and

16 a light reflection layer formed on said inner circumference
17 surface,
18 wherein said light transmission regions have thicknesses less
19 than about 5 micrometers.

1 8. The side backlight unit of claim 7 wherein said light
2 transmission regions have thicknesses 3.5 micrometers or less.

1 9. The side backlight unit according to claim 7 wherein said lamp
2 reflector further comprises a transparent protective layer formed
3 on said light reflection layer.

1 10. The side backlight unit according to claim 9 wherein said
2 transparent protective layer has a thickness less than about 5
3 micrometers.

1 11. The side backlight unit according to claim 9 wherein said
2 transparent protective layer is deposited on said light reflection
3 layer after said light reflection layer is formed on said inner
4 circumference surface.

1 12. The side backlight unit according to claim 11 wherein said
2 transparent protective layer has a thickness less than about 5
3 micrometers.

1 13. A lamp reflector for use in a side backlight unit of a liquid
2 crystal display device, said lamp reflector comprising:

3 a reflector body having an inner circumference surface
4 defining an accommodation space for a lamp;

5 a light reflection layer formed on said inner circumference
6 surface; and

7 a transparent protective layer formed on said light reflection
8 layer wherein said transparent protective layer has a thickness
9 less than about 5 micrometers.

1 14. The lamp reflector according to claim 13 wherein said
2 thickness of said transparent protective layer is 3.5 micrometers
3 or less.

1 15. The lamp reflector according to claim 13 wherein said
2 reflector body comprises a sheet-shaped support body having
3 specified rigidity.

1 16. The lamp reflector according to claim 15 wherein said sheet-
2 shaped support body comprises a material selected from the group
3 consisting of brass and stainless steel.

1 17. The lamp reflector according to claim 13 wherein said
2 transparent protective layer comprises a film consisting of a
3 material selected from the group consisting of a metal-series
4 compound and a resin.

1 18. The lamp reflector according to claim 17 wherein said metal-
2 series compound is selected from the group consisting of SiO₂,
3 TiO₂, ZnO, MgO, ZnF, MgO and indium tin oxide.

1 19. The lamp reflector according to claim 17 wherein said resin is
2 selected from the group consisting of acryl-series resin, PET and
3 polycarbonate.

1 20. The lamp reflector according to claim 13 wherein said light
2 reflection layer comprises a material selected from the group

3 consisting of Ag, Al, Pt, and a white-colored material.

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